

REMARKS

Introduction

Receipt of the Office Action mailed April 1, 2005 is acknowledged. The present amendment incorporates features of certain dependent claims into independent claims and the dependent claims are accordingly canceled without prejudice or disclaimer. New claims 40-41 are added that recite specific Zn ranges. The Zn ranges in new claims 40-41 were already claimed in original claims as filed. No new matter has been added. Entry of the amendment and favorable reconsideration are earnestly solicited.

Information Disclosure Statement

Several references listed in the IDS filed December 22, 2003 were crossed out by the Examiner. In response, Applicants have resubmitted the references crossed out on December 22, 2003 IDS and a new SB-08. Because the IDS and references were originally submitted within the time period where a fee is not required, Applicants believe no fee is due. However, if the PTO believes a fee is due, the Commissioner is authorized to charge the deposit account of the undersigned.

Claim Rejections

Claims 1-4, 6-8, 10-23, 25-39 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Haszler (US Patent No 6,342,113). Claims 1-39 were rejected under 35 USC 103(a) as allegedly being obvious over Haszler

These rejections are respectfully traversed for at least the following reasons.

First of all, as to the Examiner's position that Haszler discloses the claimed quaternary tau phase, Applicants respectfully disagree. That is, the Examiner refers generically to "Tau" phase ignoring the importance that instant claims recite a quaternary Tau composition particularly effective for corrosion resistance which gives a unique response to the corrosion tests.

In addition, present claims 1-39 all now recite the inclusion of from 0.05-0.2% Cu. It is the claimed Cu range of the present claims that provides the claimed effective quaternary Tau phase. This range of Cu has been clearly demonstrated to show unexpectedly superior results as compared to the broad range taught by Haszler of 0.4max. In addition, each pending claim recites either that the claimed alloy is subjected to a sensitization treatment from 80-200 degrees C, or else that the alloy "consists essentially of" certain elements.

It is respectfully submitted that in view of the present amendment, the instant claims are not rendered obvious by Haszler for at least the following reasons.

1. Haszler only discloses a broad range maximum for Cu content and Applicants have demonstrated criticality for the instantly claimed range of from 0.05-0.2%¹.

In Haszler, Cu is stated to be present only to a maximum amount of 0.4%, above which pitting corrosion is said to be an issue. Haszler provides no teaching on the effect of Cu on exfoliation or SCC. On the other hand, the present inventors have found that in corrosion testing of a more sensitive nature (CERT test)², the ternary Tau phase as obtained in Haszler was not as effective as expected. In particular, when the presently claimed Cu range is employed, superior test results are obtained. Thus for the Al-Mg-alloy of the present invention, a specific narrow critical Cu range provided unexpected good performance. The demonstration of criticality for the claimed Cu range is illustrated in Figure 18 in the application. Namely, Figure 18 shows the specific effect of Cu on CERT test results. Haszler does not disclose any effect of Cu on SCC and only limits it because of known pitting corrosion effects. Under well established caselaw, to show an unexpected result for a selected range within the scope of a broader range taught by a reference, all that needs to be demonstrated is a difference in kind (not merely in degree) with respect to the claimed critical range. *In re Waymouth and Koury* 499 F.2d 1273, 192 USPQ 290, 293 (CCPA 1974). See also *In re Huang*, 100 F.3d 135, 139 (Fed. Cir. 1996) which held that the

¹ New claims 40-41 are further patentable for the additional reason that the Zn range of 0.3-0.6% is recited, whereas Haszler merely teaches a very broad general range of 0.4 to 1.5% Zn.

claimed range shows unexpected results if the narrow critical range "produce[s] a new and unexpected result which is different in kind and not merely in degree from results of the prior art". This is exactly what has been demonstrated here with the claimed Cu range.

2. Haszler does not teach the claimed sensitization treatment temperatures and the instant claims that recite sensitization temperatures from 80-200 degrees C are also patentable for this further reason.

Namely, Haszler conducts a sensitization treatment at 250°C. Thus, all claims that recite a sensitization treatment from 80-200°C are not taught or suggested by Haszler. That is, nowhere does Haszler teach or provide motivation to lower the sensitization temperature. In fact, Haszler states the sensitization temperature must be "at least 200°C." Such a disclosure teaches away from a sensitization that is at most about 200°C as instantly claimed. This is a significant difference from the teaching of Haszler.

It is noted that the Examiner has asserted that Haszler teaches sensitization at 100°C. Applicants respectfully disagree. Namely, the Examiner has chosen one example (Example 3) where sensitization is carried out on an alloy (D1) in which the Mg and Zn levels are outside the invention, and Cu is stated only as a maximum. Haszler's Example 3 also contains Zr. All other examples of Haszler (and indeed the general description, see for example, Col. 3, line 50, Col. 5, line 28, Col. 6, line 5 and Col. 9, line 31) refer to an anneal temperature of at least 200°C, and in the examples 250°C.

Example 3 of Haszler clearly is not a teaching to conduct the claimed sensitization treatment for the additional reason that Haszler actually asserts in their example 3 that the alloy D1 when sensitized at 100°C does not (and cannot) have any intergranular Al-Mg-Zn intermetallics present (Col. 10, line 54), and this contributes to the good corrosion properties of alloy D1. One of skill in the art when in reading Example 3 (the location in Haszler where the Examiner has cited such a sensitization temperature of 100°C) would conclude that application of these sensitization conditions to alloy D1 would not produce Tau intermetallics at the grain

² The CERT test is described in the section on Examples-Experimental Conditions.

boundaries. To the contrary, in the present invention, a quaternary Tau phase does form at grain boundaries and, within the specific Cu range used, is effective to inhibit stress corrosion cracking (SCC) exhibited in the presence of other tau phases. Clearly Haszler TEACHES AWAY from the instant claims that include the claimed sensitization treatment temperatures.

For all these reasons, the instant claims that recite the specific sensitization treatment at a temperature of from 80-200°C are patentable over Haszler for at least this further reason.

3. Claims that recite “consisting essentially of” are further patentable for the reason that these claims do not include Zr and Zr is necessarily included by Haszler.

Some of the present claims include the language “consisting essentially of.” This language requires that nothing that affects the basic and novel properties of the claimed composition can be present. Since Haszler necessarily includes Zr, the claims that include “consisting essentially of” language are patentable for this further reason. Indeed, Haszler teaches that Zr must be included to achieve specific improved strength properties. (See col. 2, line 51). To wit, the Haszler alloys (even the alloy A9) must contain specific amounts of Zr. This is a required element, according to Haszler (col. 4, line 17), to increase strength. Zr would affect the basic and novel properties of the claimed alloys that recite “consisting essentially of.” This is well known to one of skill in the art. Hence, the claims that recite “consisting essentially of” are patentable for this further reason.

Claims 1-4, 6-8, 10-14, 17-20, 33-39 were rejected under 35 U.S.C. 102(a) or 102(b) as allegedly being anticipated by “Effects of minor Cu additions on a Zn-modified Al-5083 alloy” (“Carroll”). Claims 5, 9, 15-16 and 21-32 are rejected under 35 USC 103(a) as being unpatentable over Carroll in view of Haszler.

It is respectfully submitted that in view of the instantly submitted Declaration under 132, Carroll is not citable as prior art against the instant claims. Withdrawal of the instant rejections and favorable reconsideration are earnestly solicited.

In view of the above amendment and instant remarks, applicant believes the pending application is in condition for allowance.

Applicant hereby authorizes the Commissioner to please charge our Deposit Account No. 22-0185 in the amount of \$120.00 under order no. 22129.7 and any other fees deemed necessary, from which the undersigned is authorized to draw.

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Respectfully submitted,

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